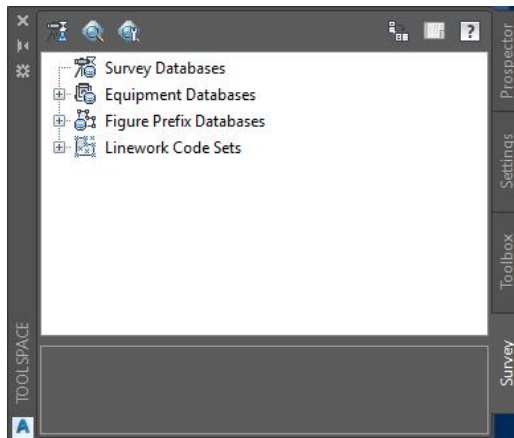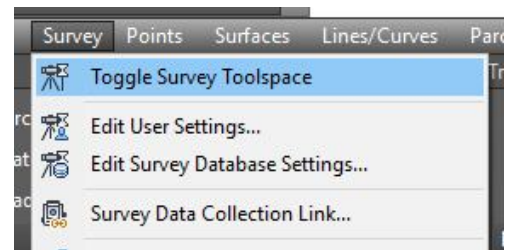# Generating Figure Line work from a Survey Point file

The first thing to know is that if you want Civil 3D to draw your line work, you have to import your point/xml file through the "Survey" toolspace that resides with "Prospector" and "Settings".

You can access this by the button on the upper left ribbon as highlighted in yellow
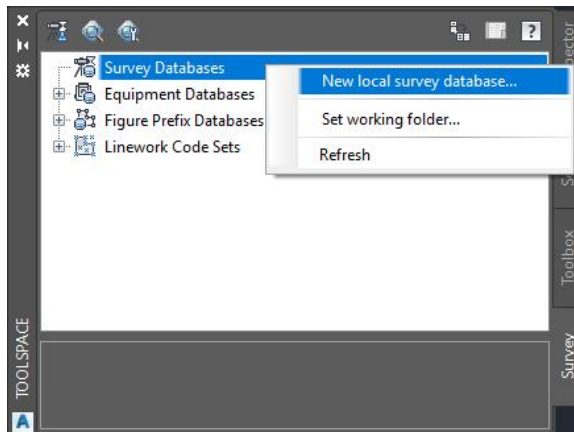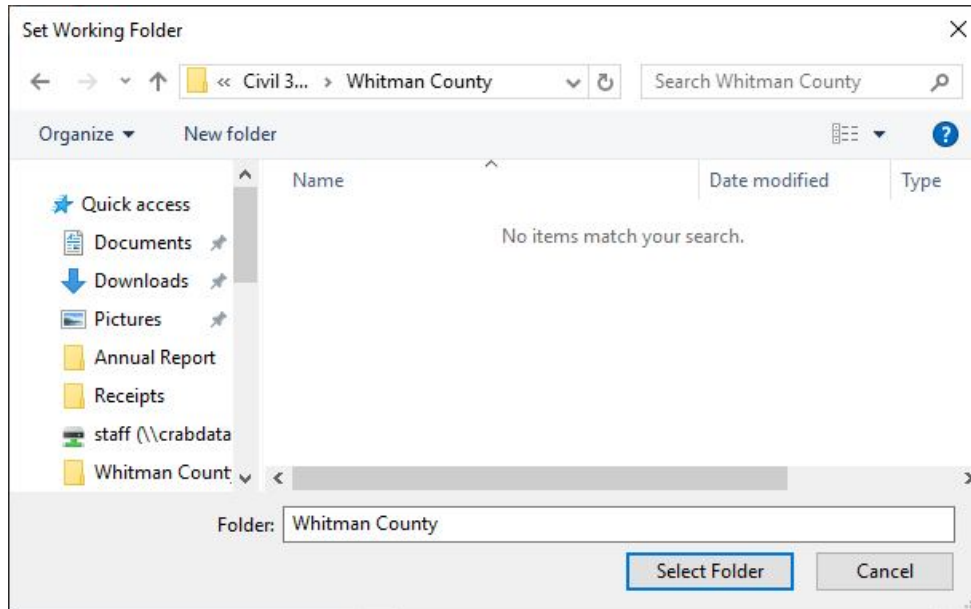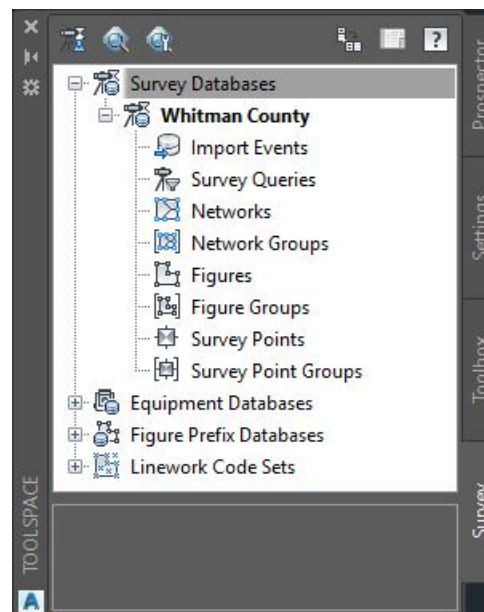
Or by using the "Survey" pull-down

Once it is open, right click on the "Survey Databases"=> "Set working folder…"

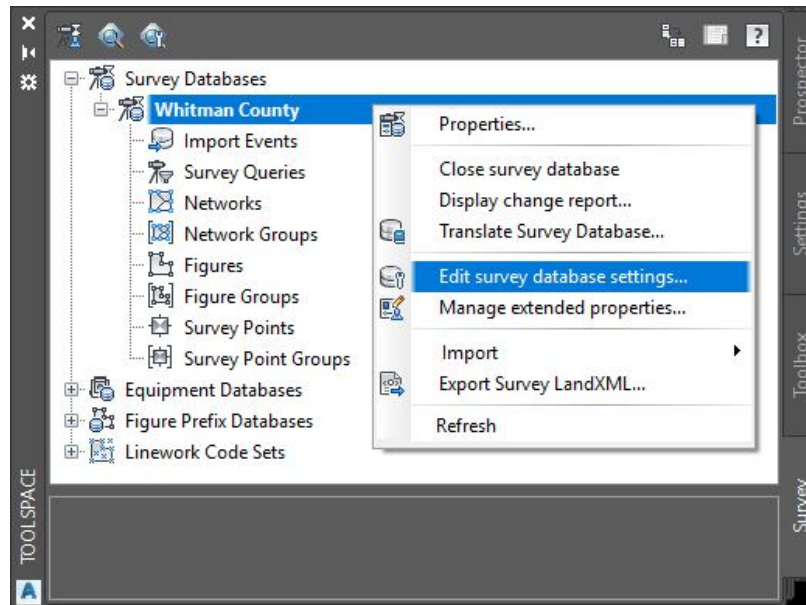Choose the path to the directory where your project resides. In this case, I'll select "Whitman County"

Next, right click on the "Survey Databases" => "New local survey database…"

I will create "Whitman County"

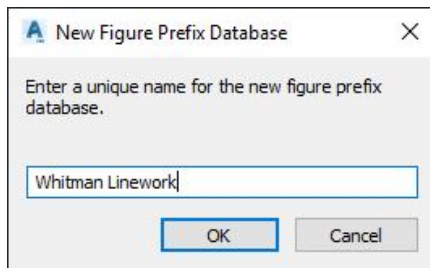Right click on "Whitman County" => "Edit survey database settings..."

You can set your Coordinate zone and Distance here if you desire. If there is no Coordinate zone set, Civil 3D will ignore any commands to Transform the points. The distance setting can come into play when inserting or referencing drawing when Civil 3D is set to auto scale on insert (INSUNITS from the command line). I suggest always turning this variable to off (zero).

Next, you need to create a Figure Prefix Database. This tells Civil 3D were to place the line work that it creates. Right click on "Figure Prefix Databases" => right click on "Sample" => select "Copy..."
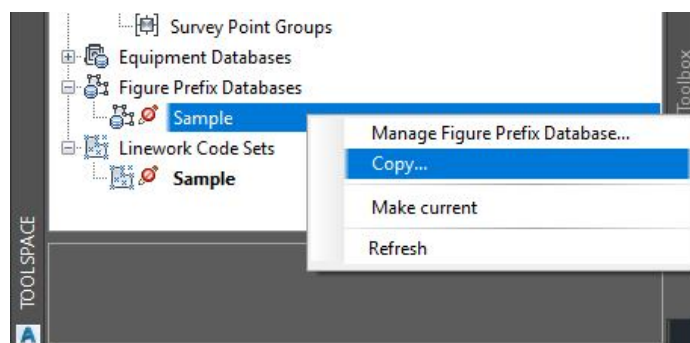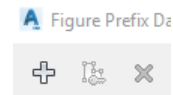
Name the database to you preference.

Now, right click on your new database and select "Manage Figure Prefix Database..."

Begin adding your codes using the plus sign at the upper left of the dialog.

Below is a completed database. The name needs to match the descriptor from the data collection. For this description, the other boxes can be left as default. See the help button for further info on how they work!
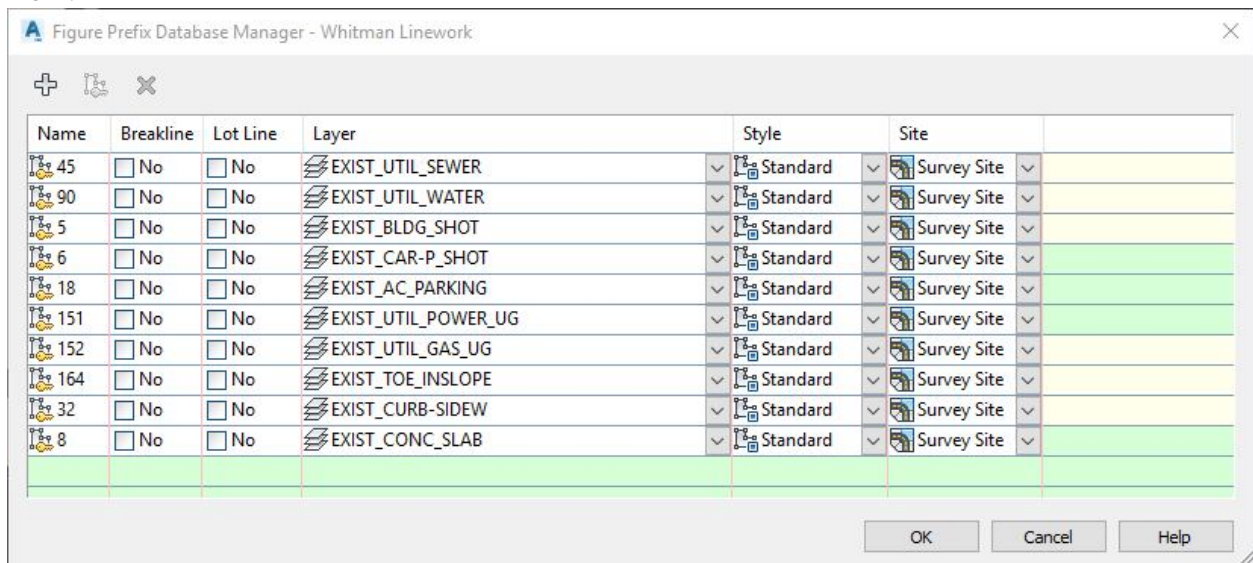

| Name	Breakline	Lot Line	Layer	Style	Site	
45	No	No	EXIST_UTIL_SEWER	Standard	Survey Site	
90	No	No	EXIST_UTIL_WATER	Standard	Survey Site	
5	No	No	EXIST_BLDG_SHOT	Standard	Survey Site	
6	No	No	EXIST_CAR-P_SHOT	Standard	Survey Site	
18	No	No	EXIST_AC_PARKING	Standard	Survey Site	
151	No	No	EXIST_UTIL_POWER_UG	Standard	Survey Site	
152	No	No	EXIST_UTIL_GAS_UG	Standard	Survey Site	
164	No	No	EXIST_TOE_INSLOPE	Standard	Survey Site	
32	No	No	EXIST_CURB-SIDEW	Standard	Survey Site	
8	No	No	EXIST_CONC_SLAB	Standard	Survey Site	

OK   Cancel   Help

Next, right click on the "Linework Code Sets" => right click on "Sample" => select "Copy...

And name the new linework code set.
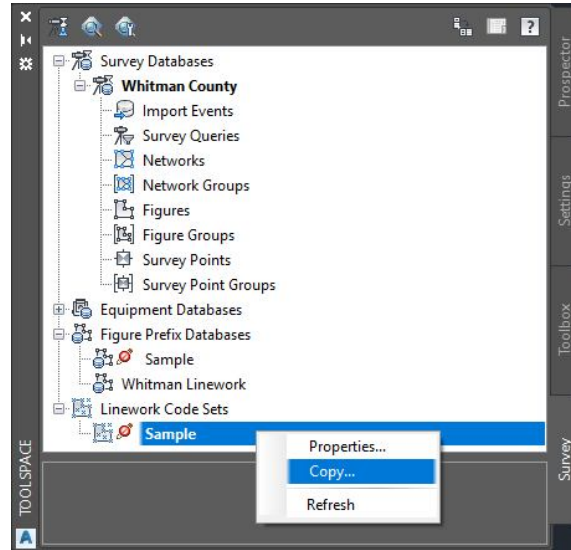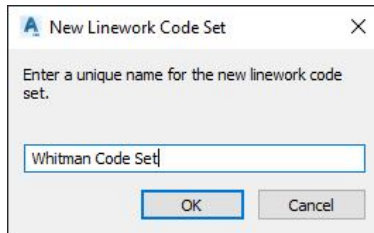
Here is where you can modify your line code sets to your preference. Since you control your line work with codes in the descriptor, uncheck the "Automatic begin on figure prefix match" box. Otherwise, it will draw lines every time it see a code listed in the Figure Prefix Database.
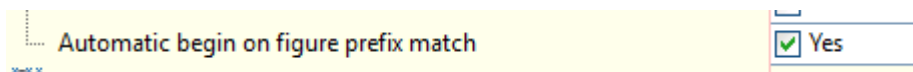
Line/figure creation can be very powerful. I encourage you to research the use of line codes to reduce shots and office work. Click this link for more info.

Now, outside of Civil 3D. Your point collection description cannot contain a period. This is a code within point descriptors that instructs Civil 3D to match any non-alphanumeric character. See this link for the description key code reference. So, remove any "CODE.CODE" reference and just use the code by itself.

`code="152.152 C"` To `code="152 C"` The Figure Prefix Database controls what the line looks like when it is drawn.

Next, back in Civil 3D, right click on "Import Events" =>
select "Import Survey Data"

In "Specify Database" select your database => "Next"
button

"Specify Data Source" by selecting your data source
type and file. The dialog will change based on your
selection. If you use a .txt or .csv, the dialog will
populate with the familiar format settings.

I will select the LandXML as that is the file you sent.
=>"Next" button
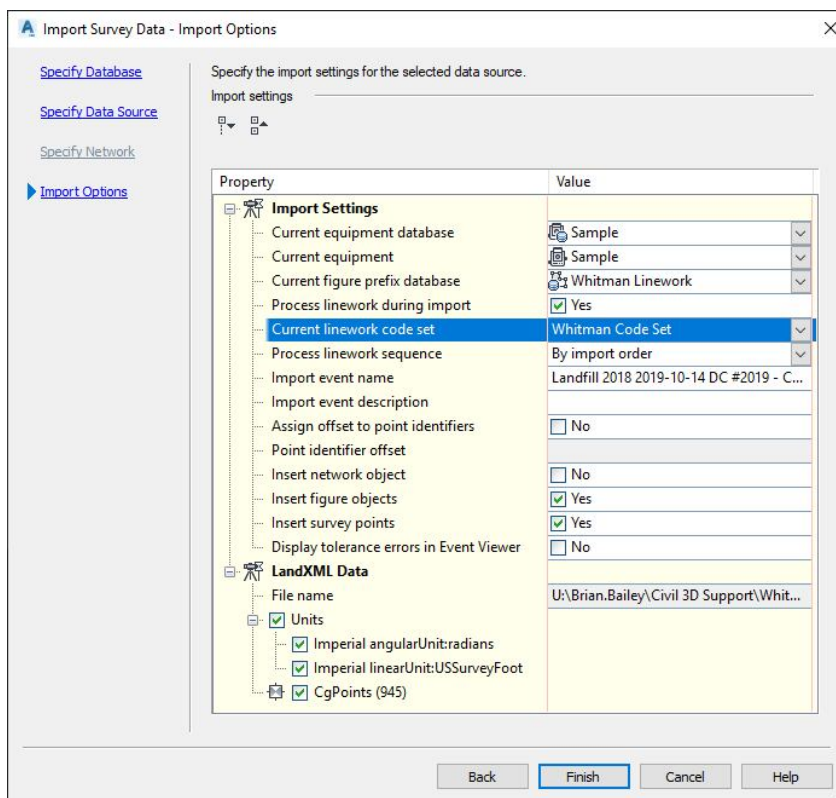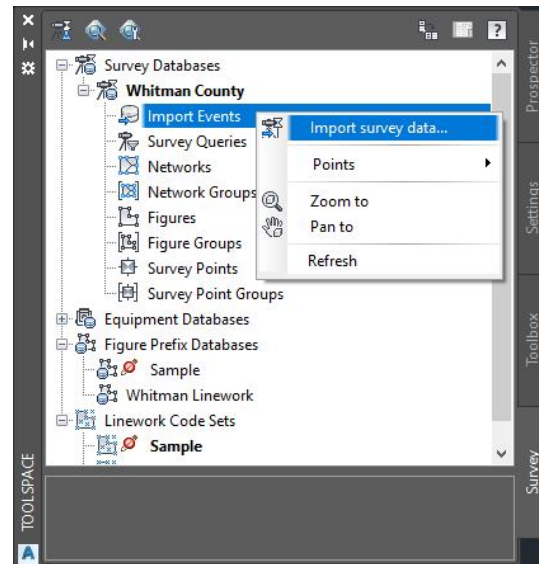
"Import Options" will require a
few adjustments. You have to
select the "Current figure prefix
database" and the "Current
linework code set" to the files
that we created earlier.

When selected, hit the "Finish"
button!

If you have selected the
appropriate annotation scale in Civil 3D, you drawing should look something like this...

`Command: options`
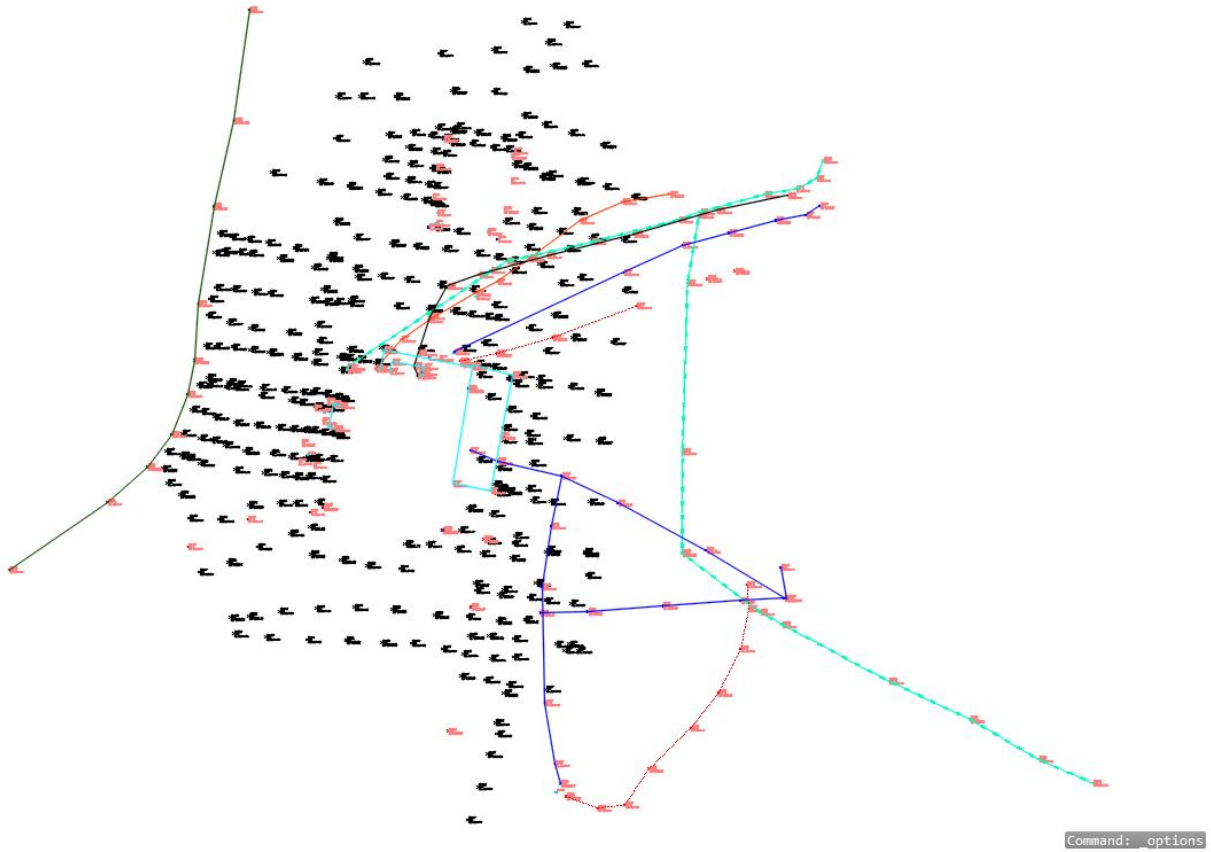
Results may vary based on your point collection and line code errors, because let us face it; it's tough to get every code in correctly when you're in the field!

A final note to keep in mind. These "Lines" are actually survey "Figures". These figures are controlled by the survey points that they are attached to. You can highlight the figure and move a vertices, but if you ever reimport the point file, it will revert to its original geometry. If at this point you want simple 3D polylines, select them and explode them. You can then flatten them using the "Convertplines" command. Save often, Civil 3D has been know to choke on itself, for no particular reason!